

"ByteBack"

ISSUE 10 • 1994

MEMORY EDITOR

Part 2

PROCmem

Got spare memory?
Find out how much is
left for your program

LETTERS

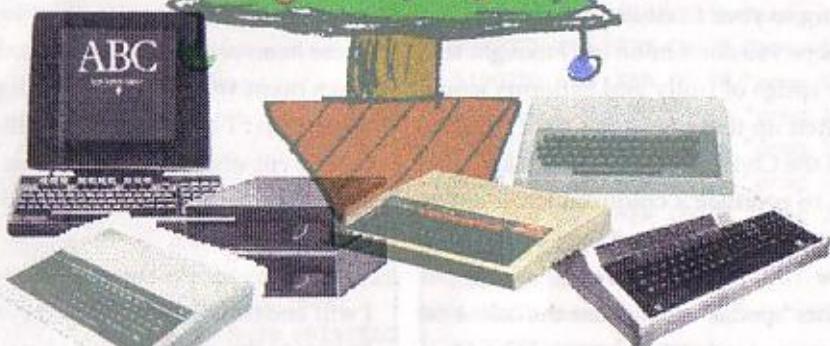
Your views in
abundance!

CHRISTMAS LIGHTS

A small program
demonstrating
a use for
"palette cycling"

DISC INDEXER

A tidy frontend to
your home-brewed
discs!



MERRY CHRISTMAS!

What will Santa be bringing you this Christmas?!!

A DIFFERENT WAY OF LOOKING AT YOUR BBC MICRO

1995 HERE WE COME

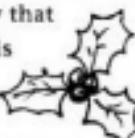
ByteBack is here to welcome the New Year in!!



Hello again. I am pleased to say that Christmas is here... and so is ByteBack! In this issue you should find part two of Andrew's Memory Editor, the concluding part I might add, hence the three solid pages of listing. There is also a simple program that uses 'palette cycling' to produce an 'animated' display of moving Christmas lights - short to input, quick to see results. I hope VIEW users found the supplement in the last issue useful. I have had to delay part two until the next issue: beating Christmas was enough for me to work to! With the two, you should be able to make a start with that trusty word processor. The series on the Acorn range is nearing completion and the first of these supplements will be in an issue of BB coming to your front door soon!

I hope you don't mind but I thought that a few sprigs of holly and balloons would brighten up this Christmas issue! And, as this is the Christmas issue, I have taken extra steps to produce a colourful front cover. Whilst the membership of ByteBack remains below 100, it is (relatively) easy to put together 'special' touches like the colour on the cover - for special occasions that is.

I receive letters from members, asking to see "more or..." this and that, more Reader's Letters, more Classifieds, and so on. I would just like to mention that any subject that isn't covered



by BB anymore is not because I get bored of putting it in or any other reason, other than shortage of that kind of information. By this I mean I can only put in Reader's Letters when Readers write to me! The same goes for Classified adverts: I can only put in items that people are selling! I know this seems fairly obvious, but I thought I should let you know. I am interested in seeing all BBC-related subject covered in BB, and whatever I have, or whatever is sent to me, will find its way in here somewhere, eventually.

While I have been considering what to do with ByteBack during the last few months (in terms of size and frequency of production, etc), office purchases have left me with a 'spare' laser printer at home, to compliment the 'spare' monitor and keyboard. These items are used when my computer is taken home work, on odd evenings. It also means that I can work on ByteBack, and print it out whenever I like. I hope this will contribute to making the production of BB easier and quicker.

Speaking of members, in the New Year I will endeavour to make ByteBack better known to the community, by way of advertising. This will help increase the variety of content as more people 'climb on board' and offer their thoughts and knowledge to BB.

Happy New Year to you!



Paul

CE INDEXER PROGRAM

A disc index program from Frank Iveson. (Why the "CE" Frank?...)

Often a diskette will contain numerous programs, each bearing a peculiar 7-letter name which, with the passage of time, becomes meaningless. This program will allow you to give your programs more meaningful titles and allow you to call them by simply entering a number. The programs can also be modified such that on ending, the menu indexer will be re-chained and again displayed.

Having typed in the program, and proved it, (noting that the entry of 20 will cause a 'quit'), simply press function key 8 to list the program then enter the name of the program against the appropriate CHAIN position (at the same time deleting the 'GOTO 130 :REM' comments), and enter the program title in the corresponding DATA name position.

```
10REM      INDEXER
20REM - MENUing program -
30REM  Frank Iveson
40REM  26 April 1994
50*KEY8 MO.3IMINIML.IM
60VDU22,7
70*FX 200,1
80FOR R=1 TO 2:PRINTTAB(11,R)CHR$(13)
1):CHR$(141);"PROGRAM INDEX":NEXT
90R=3:FOR S=1 TO 10:IF S=10 PRINTTAB
(0,R)CHR$(133);S;".":ELSE PRINTTAB(1
,R)CHR$(133);S;".":R=R+2:NEXT
100R=3:FOR S=11 TO
20:PRINTTAB(20,R)
CHR$(133);S;".":R=R+2:NEXT
110FOR S=1 TO 10:READ name$:PRINTTA
B(4,2*S+1)CHR$(134);name$:NEXT
120FOR S=1 TO 10:READ name$:PRINTTA
B(24,2*S+1)CHR$(134);name$:NEXT
```

```
130PRINTTAB(0,23)STRING$(39," ")
140PRINTTAB(5,23);"Enter the number
wanted: ";
150INPUT N
160IF N<1 OR N>20 THEN 130
170*FX 200,0
180ON N GOTO 190,200,210,220,230,240
,250,260,270,280,290,300,310,320,330
,340,350,360,370,380
190GOTO 130 :REM CHAIN "prog 1"
200GOTO 130 :REM CHAIN "prog 2"
210GOTO 130 :REM CHAIN "prog 3"
220GOTO 130 :REM CHAIN "prog 4"
230GOTO 130 :REM CHAIN "prog 5"
240GOTO 130 :REM CHAIN "prog 6"
250GOTO 130 :REM CHAIN "prog 7"
260GOTO 130 :REM CHAIN "prog 8"
270GOTO 130 :REM CHAIN "prog 9"
280GOTO 130 :REM CHAIN "prog 10"
290GOTO 130 :REM CHAIN "prog 11"
300GOTO 130 :REM CHAIN "prog 12"
310GOTO 130 :REM CHAIN "prog 13"
320GOTO 130 :REM CHAIN "prog 14"
330GOTO 130 :REM CHAIN "prog 15"
340GOTO 130 :REM CHAIN "prog 16"
350GOTO 130 :REM CHAIN "prog 17"
360GOTO 130 :REM CHAIN "prog 18"
370GOTO 130 :REM CHAIN "prog 19"
380CLS:END
390DATA name 1,name 2
400DATA name 3,name 4
410DATA name 5,name 6
420DATA name 7,name 8
430DATA name 9,name 10
440DATA name 11,name 12
450DATA name 13,name 14
460DATA name 15,name 16
470DATA name 17,name 18
480DATA name 19,Quit
```

LETTERS

Write Back to ByteBack! (OK, crap joke, I know...)



Many thanks for numbers 6 & 7 of ByteBack. The new format should help you get them out quicker.

I hope you can still continue the "Replacement Software Manual" series you started in 5 & 6 for InterWord.

Stan Doran, Blackpool

The "Replacement Software Manual", as you have now coined it, should continue for a while to come. I still have a large selection of manuals for BBC software I own. If any member has a preference for a RSM series, please let me know. After the present View series finishes, and straight after the 'BBC History' group, next on the list is Inter-Base, a Database ROM worthy of a mention, and a good companion to Inter-Word.

Thank you for issue 7 of ByteBack. I am sure like some other people I had begun to wonder what was going on. Perhaps the Editor was fleeing the country with the millions of pounds of subscriptions he had secured! I do think that if the magazine is to keep all its loyal readers, it is imperative that they are served reasonable often, certainly no more than 2 months between issues. Therefore cutting BB down to a A3 size will be the best option. Maybe when time allows an extra sheet 'pull-out special' could be printed with any

 extra material not used. The content of issue 7 proved to be fairly balanced and interesting throughout, although I would prefer more space allocated for



the letters section which I often think is one of the best parts of any computer magazine.

All the best.

John Sampson, Leeds, BB

As mentioned in the Editorial, the quantity of Letters and Classifieds that make it into ByteBack is directly proportional to the quantity I receive! With Letters, it appears to happen in two stages: a batch of 'to the Editor' letters arrive, most of which are suitable for publication; then I receive a batch of 'to Paul', normally unrelated to ByteBack or the BBC in any big way. This last group of letters is great for me to read, but can't be included in BB. Virtually every letter I receive with BBC 'morsels' is fitted into a ByteBack somewhere! As to the subject of 'Late BB', this is an ongoing saga that I have to deal with on each issue of BB! I apologise once again when an excessive delay crops up. I can only promise to try my best for each issue to get it out as soon as possible.

had a BBC B computer but had to give up about 8 years ago when we moved. I have recently purchased a BBC B again and hope to use some of the old tapes which I kept. This machine has two 5 1/4" disc drives, so I am hoping to transfer some of my tapes to disc.

The first thing I did was to ring Beebug, only to find they were closing down at the end of that week (April 1994) but they did give me the name and address of your user group.

More Letters...

What I would like to acquire are the two games: Scrabble and Cribbage.

I also want an investment program for keeping a proposed portfolio of stocks & shares. I put an advertisement in the local paper, and bought ShareMaster together with the manual and the 'Dongle' plug to fit into the back of the machine. Unfortunately the two 5" discs had been stored in the front pocket of the manual and the metal arch has pressed a dent in each of the two discs. Either this, or perhaps some other corruption, makes it impossible to take a working copy of the discs. I can *CAT the master disc to get a list of 21 files, but only 5 of these will copy to another disc, even trying them individually. I get the message Disc fault at 0A/03 (or similar numbers) on the other 16 files. As for the other disc, *CAT shows one file only called CONVERT. Using the Toolkit-Plus-Rom, I can *LOOK at this, and as it is a Basic program, that should LIST it on screen without loading it. However, it does list as far as line 3140 and then gives a Disc fault 18 at 01/00. From the manual I could see that ShareMaster had been written by Synergy Software, so I asked them if they could supply a new one. Unfortunately, as the BEEB is now obsolete they do not have it in their records any more.



If any of your members have ShareMaster and its Dongle which they no longer use, I would be happy to buy it from them (provided it is usable, of

course!) Alternatively, does anyone have a method of reading off the corrupt disc to retrieve the situation? I would be most grateful. Perhaps there is another investment program out there somewhere (not a game) which keeps share records and draws graphs?

Mrs. D.M. Graham.

■ Thank you very much for sending back issues 4 & 5 of ByteBack. I am amazed that there are still useful simple hints & tips appearing that I have never come across before. The following information may be useful additions to what has already appeared.

* Single colour printer ribbons in RED, GREEN, BLUE, BROWN, BLACK are advertised in PCW by: Dunning Computer Services 13c Sunrise Business Park BLANDFORD FORUM Dorset DT11 7TE. FAX: (01258) 480659 Tel: (01258) 480660

* In issue 5 Simon Godfrey asked about Viewdata BBS. He may be interested in: (0181) 759 2348 SILICON VILLAGE 1200/75 This was set up to try and replace the old Micronet. A free look can be obtained by using 4444444444 and 4444 as identity and password. Joining can be done on line.

* Norma Lee asked about getting hard copy from the screen. I don't know if she has received any help, but the usual most convenient method is to use some sort of screen dump ROM such as Dump Out 3 or Printmaster. It is possible to have a BASIC procedure such as BITPRINT2 which

More Letters...

appeared in the ACORN USER for November 1982. However this needs some modification depending on the horizontal bits/character of the printer. I did get it working for an Epson FX80, and also for a CTI CP80 at that time.

Cliff Blake, Portsmouth

Well done! ByteBack is back to normal, much better. I know it was probably a lot more work? But it was worth it. Well that's my humble opinion anyhow. Right, to the gentleman, Bill Thornton from last issue of BB. I have no record of him at 8-Bit Software, which means he hasn't really tried PD software has he? Please direct Mr Thornton to SBS asking him to send a formatted disc with return p&p and I would be pleased to send him further information. I put many hours of hard graft into the library and have sent out over 4000 discs (4490, I just checked) this year, with only a handful of problems and only 1 person that had so much bother with the software I had to give a refund. This problem was caused by ordering software without properly reading the 8BS catalogue.

Chris Richardson, 8BS, Hull

After reading Iss9 may I make a few points... In the tips I sent you about Model B repairs, there is an error

which may have mystified others.

I quoted that changing the 6502A CPU (IC1) will sometimes cause the machine to fire up again and that the old CPU may work correctly in another machine.

The article quoted that it may **NOT** work! The reason for this anomaly appears to be that the

waveforms from a particular CPU may become too critical to drive the fan-out of following IC's. I have picked up several 6502C CPU's from various pieces of computer junk and although I cannot find any data on this version they appear to work fine in the Model B.

Finally, the problem with modifying Master programs to work on the Model B because of the lack of the ON x PROC... command. The suggestions to overcome this work OK but using GOTO lacks structure and in a lengthy program takes up many lines. I do not make a fetish of structuring but there is an easier way which subscribers to the now defunct BEEBUG magazine may remember. This uses dynamically called Functions using the EVAL command, with a dummy return value to satisfy the FN definition syntax it equates to a procedure!! Consider the Master command...

On J% PROCx, PROCy, PROCbyte, PROCz... If J% = 3, PROCbyte will be called.

Replace this with the command...

f=EVAL("FNproc+STR\$(J%)")

[f' may be any dummy variable]

PROCbyte is now replaced by a Function in the form...

```
100 DEF FNproc3: REM PROCbyte
110 PRINT "ByteBack"
120 =0
```

When J% = 3 FNproc3 will be called and similarly any other Function within the range allocated to J% will be called by this



single line. I have used this method to run the ASTAAD program, a lengthy CAD program described in the BEEBUG magazine for the Master computer. (The magazine said it could not be run on a Model B, but it can if Shadow RAM is fitted, and a number of small changes are made to the code). Using a Function still lackes a bit of clarity but allows each to be built and tested as for a Procedure and also reduces the complexity of some Master programs.

NL Smith, Staffordshire

 Thanks for the latest issue of 'Byte Back'. I see that you have gone back to the previous format - why? Not that I mind one way or the other!

I have two main reasons for writing. The first is to ask - do you have a copy of the review of BBC support groups issued by 8BS that I could have a look at? I'd be interested in it in general & in particular to see what was said about ByteBack. I am thinking of subscribing to some additional Beeb groups; therefore I'd like to see what 8BS had to say on the subject. Don't worry I'm not going to defect to 8BS or another group!!

My second reason is to say "thanks" for publishing my last letter about my Beeb problems. BUT you missed out a few lines from the letter, consequently it doesn't make

much sense !! That is, the middle bit of it should read...



The second problem is a more recent one. Sometimes (usually!) when I start to print out a letter or something from InterWord

(usually with 'marked text' e.g. my address)

using my Juki daisy-

wheel printer the first

word of the text is not

printed. In subsequent printings

in the same session this problem

doesn't seem to recur: do you know

what's happening & why & what to do about

it? But it is printed as...

The second problem is a more recent one. Sometimes (usually !) when I start to print out a letter or something from InterWord (usually with 'marked text' e.g. my address) using my Juki daisywheel printer the first... session this problem doesn't seem to recur: ...do you know what's happening & why & what to do about it? Perhaps you could print a correction in a subsequent issue?

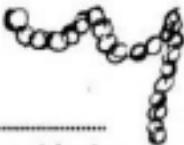
Best wishes & 'Happy Christmas' to you,
Sue Shawcross, BB034 - R2D2 - C3PO

...aargh! I think I've finally snapped!

 I understand that you are an organisation which continues to work with and support the BBC computer. I have had a Model B for some years mainly for my children's benefit since they were using such at Primary School. I am finding an increasing dearth of sources of software and, more importantly, repair facilities. In particular at this time I have a problem in formatting new discs. A screen message appears 'Sector not found 00/00'. I wonder if you would be kind enough to advise me of the services you have available and whether you can throw any light on this problem.

J Walker, Norfolk

CHRISTMAS LIGHTS



Pseudo animation, put to good use(?)

Animation on any computer can be a complicated business. There are a number of techniques for producing flicker-free graphics or moving images, some more successful than others, and most of them are complicated or long-winded. Producers of cartoons will tell you that it's a lot of hard work for little return: two hours work may only produce two seconds of animated film. This is also true of computer animation. However, there is a technique, known as 'palette cycling', that can produce the effect of movement. Although it's not animation in the truest sense, it is still very effective.

The BBC Micro comes equipped with 16 colours in MODE 2 (8 true colours, 8 flashing colours). They can be accessed by the COLOUR command, followed by a number between 0 and 15. By default, the colours are organised as shown on p17 of this issue of BB, but any of the available colours can be allocated to any of the 'slots' 0-15. By this I mean COLOUR 2 could be changed from green to yellow, or blue or any other. If something is displayed on screen in COLOUR 2, it will appear in green. If we subsequently allocate COLOUR 2 to be yellow, anything on screen using COLOUR 2 will change to yellow.

Palette-cycling involves altering the colour values in such a way as to give the appearance of movement.



The effect is similar to 'chasing lights' where the pattern of bulbs coming on and off fool the brain into thinking the light is actually moving.

Let's get into the program a little. It is set out in Procedures to make things clearer to understand:

```
10 REM Christmas Lights
20 REM ByteBack Issue Ten
30 :
40 MODE2
50 VDU23;8202;0;0;0;:REM hide cursor
60 PROCsetup: REPEAT
70 PROCdisplay_colour
80 PROCdisplay_white
90 PROCmoving_bulbs
100 PROCall_flash
110 UNTIL FALSE
```

First of all, the introduction lines and the calls to all of the PROCedures is entered.

```
790 DEFPROCsetup
800 VDU23,224,&3C,&18,&7E,&7E,&7E,
&3C,&3C,&18:REM define bulb colour
810 GCOL0,2:REM green
820 col%=9
830 VDU19,9,0,0,0,0
840 VDU19,10,0,0,0,0
850 VDU19,11,0,0,0,0
860 VDU19,12,0,0,0,0
870 VDU19,13,0,0,0,0
880 VDU19,14,0,0,0,0
```

Lines 830-880 set the Logical colours 9-14 to Actual colour black. The use of VDU 5 means that "text" elements (characters from the keyboard or User-Defined Characters) can be placed at the Graphics

christmas lights

Cursor rather than the Text Cursor. This allows for more flexibility and scope. Because we are now dealing with graphics positioning, COLOUR has to be replaced with GCOL (Graphics COLOUR). It is essentially the same as COLOUR, except that it works for graphics instead of text.

```
890 :  
900 FOR L%=-10 TO 1280 STEP 100  
910 MOVE L%,900:DRAW L%+33,860:DRAW  
L%+66,860:DRAW L%+99,900:NEXT  
920 :  
930 VDU5:FOR L%=15 TO 1280 STEP 100  
940 GCOL 0,col%  
950 MOVE L%,850:VDU224  
960 col%=col%+1:IF col%>14 col%=9  
970 NEXT:VDU4  
980 DIM bulb%(6):FOR L%=1 TO 6:bulb%  
(L%)=L%:NEXT:bulb%(4)=7  
990 DIM wbulb%(6):FOR L%=1 TO 5:wbulb  
(L%)=4:NEXT:wbulb%(6)=7  
1000 ENDPROC
```

Green has been used for the 'wires' of the lights, and all of the lights start off blue, that is 'off'.

Lines 950 and 960 draw the 'bulbs' in colours 9-14. At present they are all set to black, so on initial display, they don't show up. Once the display is in place, the colours allocated to the 'bulbs' are set to different colours: (red, yellow, cyan, magenta, white), in a repeating pattern, until all bulbs are lit.

Once the display is set up, it is simply a matter of altering the Actual colours of the Logical colours to produce the effect of moving lights. For this

section of the program, there are four separate PROCedures that alter the colours in different ways to give a variety of effects.

```
120 DEFPROCmoving_bulbs  
130 :  
140 REM move left  
150 count%0: REPEAT count%0=0  
160 FOR L%=1 TO  
6:bulb%(L%)=bulb%(L%-1):IF bulb%(L%)  
<1 bulb%(L%)=6  
170 NEXT  
180 FOR L%=1 TO 6:VDU 19,(L%+8),bulb%  
(L%),0,0,0  
190 NEXT  
200 I=INKEY(20)  
210 UNTIL count%0=20  
220 :  
230 REM move right  
240 count%0: REPEAT count%0=0  
250 FOR L%=1 TO 6:bulb%(L%)=bulb%(L%  
)+1:IF bulb%(L%)>6 bulb%(L%)=1  
260 NEXT  
270 FOR L%=1 TO 6:VDU 19,(L%+8),bulb%  
(L%),0,0,0  
280 NEXT  
290 I=INKEY(20)  
300 UNTIL count%0=20  
310 ENDPROC  
320 :
```

The first PROCedure for producing moving lights provides something that no set of Christmas lights can imitate: the colours of the bulbs actually move from one bulb to another! Well, it looks interesting anyway. The second routine is a set of white lights, as an alternative to the coloured variety. Once again, blue is used for bulbs in the 'off' position:

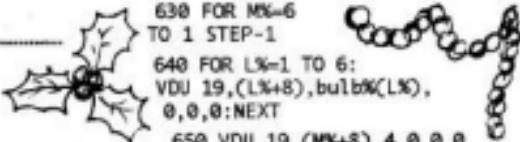


christmas lights

```
330 DEFPROCdisplay_white
340 REM move left
350 count%<0: REPEAT
count%<count%+1
360 temp%<wbulb%(1):FOR L%<1 TO
5:wbulb%(L%)<=wbulb%(L%+1):NEXT:wbulb
%(6)=temp%
370 FOR L%<1 TO 6:VDU 19,(L%+8),wbulb
%(L%),0,0,0
380 NEXT
390 I=INKEY(20)
400 UNTIL count%<20
410 :
420 REM move right
430 count%<0: REPEAT count%<count%+1
440 temp%<wbulb%(6):FOR L%<6 TO 2
STEP-1:wbulb%(L%)<=wbulb%(L%-1):NEXT:
wbulb%(1)=temp%
450 FOR L%<1 TO 6:VDU 19,(L%+8),wbulb
%(L%),0,0,0
460 NEXT
470 I=INKEY(20)
480 UNTIL count%<20
490 ENDPROC
500 :
```

The next PROCedure does a more realistic impression of moving lights, turning off two at a time in a left, then right direction:

```
510 DEFPROCdisplay_colour
520 REM move left
530 count%<0: REPEAT count%<count%+1
540 FOR M%<1 TO 6
550 FOR L%<1 TO 6:VDU 19,(L%+8),bulb
%(L%),0,0,0:NEXT
560 VDU 19,(M%+8),4,0,0,0
570 I=INKEY(20)
580 NEXT
590 UNTIL count%<3
600 :
610 REM move right
620 count%<0: REPEAT
count%<count%+1
```



630 FOR M%<6
TO 1 STEP-1

640 FOR L%<1 TO 6:
VDU 19,(L%+8),bulb%(L%),
0,0,0:NEXT

650 VDU 19,(M%+8),4,0,0,0

660 I=INKEY(20)

670 NEXT

680 UNTIL count%<3

690 ENDPROC

700 :

Finally, the shortest PROCedure, all of the lights flash on and off together. This is by far the easiest PROCedure to implement, altering all of the colours from their present colours to blue, the back again.

```
710 DEFPROCcall_flash
720 count%<0: REPEAT count%<count%+1
730 FOR L%<1 TO 6:VDU 19,(L%+8),bulb
%(L%),0,0,0:NEXT
740 I=INKEY(40)
750 FOR L%<1 TO 6:VDU 19,(L%+8),4,0,
0,0:NEXT
760 I=INKEY(30)
770 UNTIL count%<10
780 ENDPROC
```

Any or all of the display PROCedures can be entered, provided the relevant lines 70-100 are entered in association. Each routine plays through for a few seconds, before passing on to the next. At the end of the display PROCedures, the routines are called again. This goes on forever, or until you press **ESCAPE**.

Although this is not a marvelous example of the BBC's graphic ability, it does show that it's very easy to produce clever effects just by altering the Actual colour values of the Beeb's colour palette.

PROCMEM

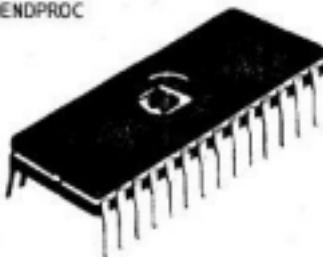
A memory printout routine by Frank Iveson

Although this program has been designed to produce a printout of your Beeb's memory statistics to a printer, as it stands it will print your Beeb's memory information to the screen. To send the output to your printer, remove the REM details from line 3030.

Because of the way the lines are numbered, it is an ideal Procedure to put at the end of a program that you are developing. By calling the procedure up, you will be presented with information about the amount of memory used and how much is left, including other useful values, for instance, Shadow Ram memory. Providing your program doesn't already contain any of these line numbers, it could be Spooled in at a later stage of development.

```
10PROCmem
20CLS
30END
40:
3000DEF PROCmem
3010VDU 22,7
3020:
3030REM VDU2 *** Delete the REM to
produce a printout ***
3040:
3050PRINT "SPC(10)"MEMORY STATISTICS"
3060PRINTSPC(10)_____
3070PRINTSPC(10)"All values in HEX"
3080IF HIMEM < &8000 GOTO 3130
3090PRINT "SCREEN MEMORY..."
3100PRINT "SHAD.RAM
TOP:"SPC3;-(&CE20);SPC3;"SCREEN
```

```
MEM: "-(&CE20-&8000)
3110PRINT"HIMEM:"SPC10;
-HIMEM;SPC3; "(&CE20-HIMEM)"
3120IF HIMEM = &8000 GOTO 3160
3130PRINT ""EXECUTION MEMORY...
3140PRINT "RAM TOP:"SPC8;-(&8000);
SPC3;"SCREEN MEM: "-(&8000-HIMEM)
3150PRINT"HIMEM:"SPC10;~HIMEM;
SPC3;"(&8000-HIMEM)"
3160PRINT ""EXECUTION MEMORY...
3170PRINT "HIMEM:"SPC10;
-HIMEM;SPC3;"AVAIL MEM: "-HIMEM-
LOMEM
3180PRINT"LOMEM:"SPC10;~LOMEM;SPC3"(
HIMEM-LOMEM)"
3190PRINT ""PROGRAM/VARIABLES STORAG
E MEMORY...
3200PRINT "TOP:"SPC12;~TOP;SPC3;"PRO
G SIZE: ";~TOP-PAGE
3210PRINT"PAGE:"SPC11;~PAGE ;SPC3"(
TOP-PAGE)"
3220:
3230VDU3 :REM *** Stops further
printing ***
3240:
3250REPEAT:PRINTTAB (6,24)"Press
SPACE BAR to continue":UNTIL GET=32
3260VDU 22,7
3270ENDPROC
```



By Frank Iveson

How much spare space do you have inside these little things? Run this program and find out!!!

MEMORY EDITING #2

by Andrew Bennett, continued from Issue 9

740LDA #225	1130.me_next4	1520ASL A
750LDX #80	1140CMP #89E	1530ASL A
760LDY #0	1150BNE me_next5	1540.me_or
770STY current+1	1160JMP me_pagedown	1550ORA #0
780STY edittype+1	1170.me_next5	1560JSR write
790JSR osbyte	1180CMP #89F	1570JSR thisline
800STX olfdx225+1	1190BNE me_next6	1580JMP me_loop4
810LDA #226	1200JMP me_pageup	1590.me_ascii
820LDX #890	1210.me_next6	1600LDX current+1
830LDY #0	1220CMP #9	1610JSR write
840JSR osbyte	1230BNE me_next7	1620JSR thisline
850STX olfdx226+1	1240LDA edittype+1	1630:
860:	1250EOR #1	1640.me_right
870.me_loop3	1260STA edittype+1	1650INC current+1
880JSR screen	1270BCS me_loop4	1660LDA current+1
890.me_loop4	1280.me_next7	1670CMP width+1
900JSR highlight	1290LDX edittype+1	1680BNE me_jmploop4
910JSR osrdch	1300BEQ me_ascii	1690LDA #0
920BCC me_next0	1310SEC	1700STA current+1
930JMP me_exit	13205BC #ASC"0"	1710.me_down
940.me_next0	1330BCC me_loop4	1720CLC
950PHA	1340OMP #10	1730LDA write+1
960JSR unhighlight	1350BCC me_digok	1740ADC width+1
970PLA	13605BC #7	1750STA write+1
980CMP #8C	1370OMP #16	1760BCC me_downdraw
990BNE me_next1	1380BCC me_digcheck	1770INC write+2
1000JMP me_left	13905BC #ASC"0"-ASC"A"	1780.me_downdraw
1010.me_next1	1400.me_digcheck	1790LDY height+1
1020CMP #8D	1410OMP #10	1800JSR left
1030BNE me_next2	1420BCC me_loop4	1810JSR osnewl
1040JMP me_right	1430OMP #16	1820JSR screenend
1050.me_next2	1440BCS me_loop4	1830JSR line
1060CMP #8E	1450.me_digok	1840.me_jmploop4
1070BNE me_next3	1460STA me_or+1	1850JMP me_loop4
1080JMP me_down	1470JSR writetoread	1860:
1090.me_next3	1480LDX current+1	1870.me_left
1100CMP #8F	1490JSR read	1880DEC current+1
1110BNE me_next4	1500ASL A	1890SPL
1120JMP me_up	1510ASL A	me_jmploop4

Memory Editing...

1900LDX width+1	2320JSR osbyte	2750:
1910DEX	2330LDA #4	2760.readpos
1920STX current+1	2340.oldfx4	2770LDA #134
1930.me_up	2350LDX #0	2780JMP osbyte
1940SEC	2360JSR osbyte	2790:
1950LDA write+1	2370.cls	2800.readtowrite
1960SBC width+1	2380LDA #12	2810LDA read+1
1970STA write+1	2390BNE branchwrch	2820STA write+1
1980BCS me_updraw	2400:	2830LDA read+2
1990DEC write+2	2410.topleft	2840STA write+2
2000.me_updraw	2420LDY #0	2850RTS
2010JSR topleft	2430.left	2860:
2020LDA #11	2440LDX #0	2870.writetoread
2030JSR oswrch	2450:	2880LDA write+1
2040JSR screenstart	2460.tab	2890STA read+1
2050JSR line	2470LDA #31	2900LDA write+2
2060JMP me_loop4	2480JSR oswrch	2910STA read+2
2070:	2490TXA	2920RTS
2080.me_pagedown	2500JSR oswrch	2930:
2090JSR screenend	2510TYA	2940.screenstart
2100JSR readtowrite	2520.branchwrch	2950JSR writetoread
2110JMP me_loop3	2530JMP oswrch	2960LDX editline+1
2120:	2540:	2970.scst_loop1
2130.me_pageup	2550.space .	2980SEC
2140JSR screenstart	2560LDA #32	2990LDA read+1
2150JSR readtowrite	2570BNE branchwrch	3000SBC width+1
2160JMP me_loop3	2580:	3010STA read+1
2170:	2590.phex	3020BCS scst_ndec1
2180.write	2600PHA	3030DEC read+2
2190STA &FFFF,X	2610LSR A	3040.scst_ndec1
2200RTS	2620LSR A	3050DEX
2210:	2630LSR A	3060BNE scst_loop1
2220.me_exit	2640LSR A	3070RTS
2230LDA #226	2650JSR ph_digit	3080:
2240.oldfx226	2660PLA	3090.screenend
2250LDX #0	2670AND #15	3100JSR writetoread
2260LDY #0	2680.ph_digit	3110SEC
2270JSR osbyte	2690CMP #10	3120LDA height+1
2280LDA #225	2700BCC ph_lt10	3130SBC editline+1
2290.oldfx225	2710ADC #6	3140TAX
2300LDX #0	2720.ph_lt10	3150.scen_loop1
2310LDY #0	2730ADC #48	3160CLC
	2740BCC branchwrch	3170LDA read+1



Memory Editing...

3180ADC width+1	3600JSR read	4030LDA #ASC"("
3190STA read+1	3610JSR phex	4040PHA
3200BCC scen_ninc1	3620JSR space	4050:
3210INC read+2	3630INX	4060.editline
3220.scen_ninc1	3640.width	4070LDY #0
3230DEX	3650CPX #0	4080.current
3240BNE scen_loop1	3660BNE ln_loop1	4090LDA #0
3250RTS	3670LDX #0	4100ASL A
3260:	3680.ln_loop2	4110CLC
3270.screen	3690JSR read	4120ADC current+1
3280JSR screenstart	3700CMP #32	4130ADC #4
3290JSR topleft	3710BCC ln_dot	4140TAX
3300.height	3720CMP #127	4150JSR tab
3310LDY #0	3730BCC ln_ok	4160PLA
3320.scr_loop1	3740.ln_dot	4170JSR oswrch
3330JSR line	3750LDA #ASC"."	4180TXA
3340DEY	3760.ln_ok	4190CLC
3350BMI scr_exit	3770JSR oswrch	4200ADC #3
3360JSR osnewl	3790CPX width+1	4210TAX
3370CLC	3800BNE ln_loop2	4220JSR tab
3380LDA read+1	3810.read	4230PLA
3390ADC width+1	3820LDA &FFFF,X	4240JSR oswrch
3400STA read+1	3830RTS	4250LDA width+1
3410BCC scr_loop1	3840:	4260ASL A
3420INC read+2	3850.unhighlight	4270CLC
3430JMP scr_loop1	3860LDA #32	4280ADC width+1
3440.scr_exit	3870PHA	4290ADC #5
3450RTS	3880PHA	4300ADC current+1
3460:	3890BNE editline	4310TAX
3470.thisline	3900:	4320JMP tab
3480JSR writetoread	3910.highlight	4330]
3490LDY editline+1	3920.edittype	4340NEXT
3500JSR left	3930LDX #0	4350ENDPROC
3510:	3940BEQ hl_ascii	4360:
3520.line	3950LDA #ASC"]"	4370DEF PROCsave
3530LDA read+2	3960PHA	438005CLI"SAVE
3540JSR phex	3970LDA #ASC"[Medit
3550LDA read+1	3980PHA	"+STR\$-code%+"
3560JSR phex	3990BNE editline	"+STR\$-0%+"
3570JSR space	4000.hl_ascii	"+STR\$-medit%+"
3580LDX #0	4010LDA #ASC")"	"+STR\$-dest%
3590.ln_loop1	4020PHA	4390ENDPROC

THE HISTORY OF ACORN

5TH DECEMBER 1978

Acorn Computers was born, on a kitchen table in a back room. Their first creation was an electronic slot machine.

MARCH 1980

After the Acorn System 1,2, and 3, Acorn launch the first commercial microcomputer - the ATOM.

FEBRUARY 1981

Kenneth Baker, Minister of IT, sponsors the use of computers in Secondary Schools.

APRIL 1981

Acorn wins contract from BBC to provide the PROTON.

JANUARY 1982

BBC Microcomputer System launched. Chosen for 7 out of 10 micros bought for UK schools.

SEPTEMBER 1983

Flotations on USM.

APRIL 1984

Acorn wins the Queen's Award for Technology for the BBC Micro.

SEPTEMBER 1985

Olivetti takes controlling interest.

JANUARY 1986

Launch of the Master 128 Series computers

NOVEMBER 1986

Launch of the BBC Domesday System

JUNE 1987

Launch of the Archimedes: the first 32bit RISC based microcomputers under UKP1000.

FEBRUARY 1989

R140 launched: the first UNIX workstation under UKP4000.

MAY 1989

A3000 launched: the new BBC Micro.

...and the rest is history!!

COLOUR n	See table for values of n	Foreground	Background	MODE 2	MODEs 1,5	MODEs 0,3,4,6
0	128			Black	Black	Black
1	129			Red	Red	White
2	130			Green	Yellow	
3	131			Yellow	White	
4	132			Blue		
5	133			Magenta		
6	134			Cyan		
7	135			White		
8	136			Black-White (flashing)		See VDU19
9	137			Red-Cyan (flashing)		to alter
10	138			Green-Magenta (flashing)		default
11	139			Yellow-Blue (flashing)		colour
12	140			Blue-Yellow (flashing)		
13	141			Magenta-Green (flashing)		
14	142			Cyan-Red (flashing)		
15	143			White-Black (flashing)		

CLASSIFIEDS

BBC PSU's and keyboards for sale, 3 Master 128's and 100's of educational/games programmes (commercial). If anyone is interested please let me know ASAP as I'm moving and must shift it quick. Call D.Roberts 0274-596751 (Bradford)

WANTED: 1) Tape-to-Disc transfer utility; 2) 'ELITE' instructions; 3) Solidisc ADFS instruction manual.

Contact Brian: 23 Howard Close, Royal Oak, Newport, Gwent NP9 9FR

WANTED for hard-working BBC a double sided, double density, twin disc drive unit (drives side by side) incorporating own PSU. Please Contact Paul on 0992-652066 (evenings), or write to ByteBack at the address below!

FOR SALE:

1000's of surplus components, modern, new, unused: resistors, capacitors, boards to dismantle, key-operated switches, 3 volt Lithium cells etc. Anyone interested in Electronics/Ham Radio should not miss this! Send stamp for list; **Two BBC B keyboards**, used but perfect. FREE. Just order one and send me the postage afterwards. Connector included.

2 position miniature toggle switch for BBC Master. Just plugs in - no soldering. Switch between Ram & Eprom £1;

Aries B32 Sideways Ram board for BBC Micro £20; ATPL

Sideways Eprom board for the BBC B PLUS only. £20; 1200/75 modem - BBC ready with connections - £20.

Satellite TV. I can supply ANYTHING from dishes, receivers, down to LNB or components for the receiver. Ask for Satellite price list, send stamp; **"Understanding Inter-Word"** book just £6.50 inc. My famous "Inter-Base Programming Guide" for £14.95 inclusive. Special offer to Byte-Back members: send me a formatted disc (80T any size, any format) and I will copy my Examples Disc onto it (normally £2 extra).

Contact: M T Pickering, 10 Bollin Close, Sandbach, Cheshire. CW11 9TZ. 0270 761928 (eves) 0589 355411 (mobile)

WANTED: Beebug Magazines: Vol 1, Nos 1,2,3,4,6,8; Vol 2, Nos 1,5; Vol 3, No 10; Vol 4, Nos 2,3 (need info about B+); Vol 5, Nos 6,8,9

FOR SALE: Beebug magazines: Vol 1, Nos 9,10; Vol 2, Nos 7,9,10; Vol 3, Nos 1,2,3,5; Vol 4, Nos 8,9,10; Vol 5, nos 1,2; Vol 6, Nos 4,5,6,7,8,9,10; Vol 7, No 2; Vol 10, No 1; Vol 11, No 10; Swap for above, or sell for 20p each+ 19p per issue p&p. Contact Lorna Jenne, 53

Uffington Road, West Norwood, SE27 0NE

BBC B Issue 3 with full height 40tk opus 5½" drive, GWO, £60. Call 0666 860577

BBC B, dual Ahkter drives (40/80) in plinth, Philips monitor, sideways Ram board and some software, £160. Call 0582 562508

BBC Computer, 128k Rom/Ram board, dual ds disc drives, Opus D DOS, Viewspell, View, Viewsheet, View printer driver, Max, Sideways ZIF socket, Acom monitor, Bridge unit, Panasonic printer, joystick mouse, manuals, much software, superb condition, £125. Call 0476 79972

BBC B with Torch Z80 upgrade. Complete with built in twin 5.25" disc drives. Excellent condition. Only £47 as space needed. Contact John 0733 203666, Peterborough. Buyer collects.

BBC software, Over 200 games, plus other software, all on 80-track discs. £25 the lot. Call 0934 623506. Weston Super Mare.

BBC Master 128k Cumana disc drive, software both games and educational. £100. Call 081 994 7400 after 4.30pm.

BBC Computer complete with colour monitor, twin disc drive, mouse and some programs, £95. Call 061 620 7868